



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

JANE SWIFT  
Governor

BOB DURAND  
Secretary

LAUREN A. LISS  
Commissioner

**APPROVAL FOR REMEDIAL USE**  
Pursuant to Title, 310 CMR 15.00

Name and Address of Applicant:

Bord na Mona Environmental Products U.S. Inc.  
4106 Bernau Avenue  
Greensboro, NC 27407

Trade name of technology and model: Puraflo Peat Fiber Biofilter (hereinafter called the "System")  
A schematic drawing of a typical Puraflo unit is attached and is a part of this Approval.

Date of Application: November 19, 2001  
Transmittal Number: W 021062  
Date of Issuance: June 19, 2002  
Expiration date: June 19, 2007

**Authority for Issuance**

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental, Protection hereby issues this Approval for Remedial Use to: Bord na Mona Environmental Products U.S. Inc., 4106 Bernau Avenue, Greensboro, NC 27407 (hereinafter "the Company"), approving the System described herein for Remedial Use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on compliance by the Company and the System owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

Signed  
Glenn Haas, Director  
Division of Watershed Management  
Department of Environmental of Protection

June 19, 2002  
Date

This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

DEP on the World Wide Web: <http://www.mass.gov/dep>



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## **I. Purpose**

1. The purpose of this approval is to allow use of the System in Massachusetts, on a Remedial Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Approval for Remedial Use authorizes the use and installation of the System in Massachusetts.
3. The System may only be installed on facilities that meet the criteria of 310 CMR 15.284(2).
4. This Approval for Remedial Use authorizes the use of the System where the local approving authority finds that the System is for upgrade of a failed, failing or nonconforming system and the design flow for the facility is less than 10,000 gallons per day (GPD).

## **II. Design Standards**

1. The System is an aerobic peat based treatment system designed to treat the effluent from facilities with a design flow of less than 10,000 GPD. The System is comprised of modules made of linear low-density polyethylene, LLDPE, which contain peat fiber. Each module has a capacity of 150 GPD. Effluent from the septic tank is applied by pressure distribution to the peat fiber by a pump operated by a timer with a high water level override and high water alarm set three inches higher than the high water setting. The alarm shall be connected to an independent power source run from the main power source of the facility. The pump chamber shall have storage volume above the high water setting equal to one days design flow.
2. The peat fiber is a proprietary product which is comprised of undecomposed roots of bog cotton and bog sedges with an approximate loose density of 22-28 pounds per cubic foot and an organic matter content greater than 95%. After percolating through the peat, the filtrate is collected in the bottom of the module and discharged through a drain pipe assembly, sized in accordance with the System manufacturer's requirements, which can also be supplied by the System manufacturer, to a manifold system, sized in accordance with System manufacturer's recommendations, which intercepts all module effluent and discharges to pump chamber for pressure distribution to the soil absorption system (SAS).
3. The System shall be installed in series between a septic tank designed in accordance with 310 CMR 15.223 and the pressure distribution chamber of the SAS of a system designed and constructed in accordance with 310 CMR 15.100 - 15.279, subject to the provisions of this Approval. The discharge from the septic tank shall be equipped with an approved Effluent Tee Filter.

4. The System may be used in soils with a percolation rate of up to 90 minutes per inch (MPI). For soils with a percolation rate of 60 to 90 MPI, the effluent loading rate shall be 0.15 gpd / sq. ft.

### **III. Allowable Soil Absorption System Design**

1. Reduction of the Required Soil Absorption System Size - An Applicant is eligible for up to a 50 percent reduction in the area of the soil absorption system required by 310 CMR 15.242, where all the following is met. Accordingly, in approving design and installation of the System by a particular Applicant, the local approving authority may allow up to a 50 percent reduction in the area of the soil absorption system required by 310 CMR 15.242, provided that all of the following conditions are met:
  - A. No reduction in the required separation (four feet in soils with a recorded percolation rate of more than two minutes per inch or five feet in soils with a recorded percolation rate of two minutes or less per inch) between the bottom of the stone underlying the SAS and the high groundwater elevation is allowed unless such a reduction is first approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284.
  - B. No reduction in the required four feet of naturally occurring pervious material is allowed unless the Applicant has demonstrated that the four foot requirement cannot be met anywhere on the site, that easements to adjacent property on which a system in compliance with the four foot requirement could be installed have been requested but cannot be obtained, and that a shared system is not feasible. Any such reduction must first be approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284.
  - C. Where full compliance with all of the minimum set back distances in 310 CMR 15.211 is not feasible, the local approving authority may allow a reduction under a local upgrade approval in accordance with 310 CMR 15.405 (1) (a), (b), (f), (g), and (h).
  - D. Where full compliance with all of the minimum set back distances in 310 CMR 15.211 is not feasible, even taking into account provisions for local upgrade approval as described above, then pursuant to 310 CMR 15.410, the applicant first must obtain variance(s) from the local approving authority and then approval of the Department.
2. Reduction of the Required Separation Distance to High Groundwater Elevation - An applicant is eligible for a reduction in separation (four feet in soils with a recorded percolation rate of more than two minutes per inch or five feet in soils with a recorded percolation rate of two minutes or less per inch) between the bottom of the stone

underlying the SAS and the high groundwater elevation, where all of the following conditions are met. Accordingly, in approving design and installation of the System by a particular Applicant, the local approving authority may allow a reduction in the required separation between the bottom of the stone underlying the SAS and the high groundwater elevation, provided that all of the following conditions are met:

- A. A minimum two foot separation (in soils with a recorded percolation rate of more than two minutes per inch) or a minimum three foot separation (in soils with a recorded percolation rate of two minutes or less per inch) between the bottom of the stone underlying the SAS and the high groundwater elevation is maintained.
  - B. No reduction in the required SAS size is allowed unless such a reduction is first approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284.
  - C. No reduction in the required four feet of naturally occurring pervious material is allowed unless the Applicant has demonstrated that the four foot requirement cannot be met anywhere on the site, that easements to adjacent property on which a system in compliance with the four foot requirement could be installed have been requested but cannot be obtained, and that a shared system is not feasible. Any such reduction must first be approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284.
  - D. Where full compliance with all of the minimum set back distances in 310 CMR 15.211 is not feasible, the local approving authority may allow a reduction under a local upgrade approval in accordance with 310 CMR 15.405 (1) (a), (b), (f), (g), and (h).
  - E. Where full compliance with all of the minimum set back distances in 310 CMR 15.211 is not feasible, even taking into account provisions for local upgrade approval as described above, then pursuant to 310 CMR 15.410, the applicant first must obtain variance(s) from the local approving authority and then approval of the Department.
3. Reduction of the Requirement for Four Feet of Naturally Occurring Pervious Material – An Applicant is eligible for a reduction in the required four feet of naturally occurring pervious material in an area of no less than two feet of naturally occurring pervious material, where all of the following conditions are met. Accordingly, in approving design and installation of the System by a particular Applicant, the local approving authority may allow a reduction in the required four feet of naturally occurring pervious material in an area with no less than two feet of naturally occurring pervious material, provided that all of the following conditions are met:

- A. The Applicant has demonstrated that the four foot requirement cannot be met anywhere on the site, and that easements to adjacent property on which a system in compliance with the four foot requirement could be installed have been requested but cannot be obtained, and that a shared system is not feasible.
- B. No reduction in the required SAS size is allowed unless such a reduction is first approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284.
- C. No reduction in the required separation (four feet in soils with a recorded percolation rate of more than two minutes per inch or five feet in soils or five percolation rate of two minutes or less per inch) between the bottom of the stone underlying the SAS and the high groundwater elevation is allowed unless such a reduction is first approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284.
- D. Where full compliance with all of the minimum set back distances in 310 CMR 15.211 is not feasible, the local approving authority may allow a reduction under a local upgrade approval in accordance with 310 CMR 15.405 (1) (a), (b), (f), (g), and (h).
- E. Where full compliance with all of the minimum set back distances in 310 CMR 15.211 is not feasible, even taking into account provisions for local upgrade approval as described above, then pursuant to 310 CMR 15.410, the applicant first must obtain variance(s) from the local approving authority and then approval of the Department.

#### **IV. General Conditions**

- 1. All provisions of 310 CMR 15.000 are applicable to the use of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Approval.
- 2. Any required sample analysis shall be conducted by an independent U.S. EPA or DEP approved testing laboratory, or a DEP approved independent university laboratory. It shall be a violation of this Approval to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.
- 3. The facility served by the System and the System itself shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.

4. In accordance with applicable law, the Department and the local approving authority may require the owner of the System to cease operation of the system and/or to take any other action as it deems necessary to protect public health, safety, welfare and the environment.
5. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sewer system. Accordingly, no System shall be installed, upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004.
6. Design, installation and operation shall be in strict conformance with the Company's DEP approved plans and specifications, 310 CMR 15.000 and this Approval.
7. Pressure distribution designed in accordance with Department guidance is required for all installations of the System.

**V. Conditions Applicable to the System Owner**

1. The System is approved for the treatment and disposal of sanitary sewage only. Any wastes that are non-sanitary sewage generated or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed.
2. Effluent discharge concentrations shall meet or exceed secondary treatment standards of 30 mg/L biochemical oxygen demand (BOD<sub>5</sub>) and 30 mg/L total suspended solids (TSS). The effluent pH shall not be less than 6.0 or more than 8.0.
3. All samples shall be taken at a flowing discharge point, i.e. distribution box, pipe entering a pump chamber or other Department approved location from the treatment unit. Any required influent sample shall be taken at a point that will provide a representative sample of the influent. Influent sampling locations shall be determined by the system designer, subject to written approval by the Department
4. Operation and Maintenance Agreement:
  - A. Throughout its life, the Owner of the System shall have the System properly operated and maintained in accordance with Company's and designer's operation and maintenance requirements and this Approval and be under an operation and maintenance agreement (O&M). No O&M agreement shall be for less than one year.
  - B. No System shall be used until an O&M agreement is submitted to the approving authority which:

- provides for the contracting with the Company or its approved management company, trained by the Company as provided in Section V (6), to operate the System consistent with the System's specifications and the operation and maintenance requirements specified by the designer and any specified by the Department
  - contains procedures for notification to the Department and the local board of health within of a System failure or alarm event and for corrective measures to be taken immediately;
  - provides the name of an operator, which must be a Massachusetts certified operator if one is required by 257 CMR 2.00, that will operate and monitor the System. The operator must operate and maintain the System at least every three months and anytime there is an alarm event for residential facilities with a design flow less than 2,000 GPD and at least monthly for facilities with a design flow greater than 2,000 GPD and all non-residential facilities
5. The owner of the System shall at all times have the System properly operated and maintained in accordance with this Approval, the designer's operation and maintenance requirements and the Company's approved procedures and sampling protocols. The System owner shall notify the Department and the local approving authority in writing within seven days of any cancellation, expiration or other change in the terms and/or conditions of their O&M agreement.
  6. Prior to transferring any or all interest in the property served by the System, or any portion of the property, including any possessory interest, the owner of the System shall provide written notice of all conditions contained in this Approval to the transferee(s). Any and all instruments of transfer and any leases or rental agreements shall include as an exhibit attached thereto and made a part thereof a copy of this Approval for the System. The System owner shall send a copy of such written notification(s) to the Department and local approving authority within 10 days of such notice being given.
  7. By January 31<sup>st</sup> of each year for the previous year, the System owner shall submit to the Department and the local approving authority an O&M checklist and a technology checklist, completed by the System operator for each inspection performed during the previous calendar year. Copies of the checklists are attached to this approval.
  8. Effluent from the System serving a facility with a design flow of less than 2000 GPD and both influent and effluent from systems serving a facility with a design flow 2000 GPD to 10,000 GPD shall be monitored quarterly. At a minimum, the following parameters shall

be monitored: pH, BOD<sub>5</sub>, and TSS. After one year of monitoring and reporting and at the written request of the owner, the Department may reduce the monitoring and reporting requirements.

9. By January 31<sup>st</sup> of each year for the previous year, the System owner shall submit to the Department and the local approving authority an O&M checklist and a technology checklist, completed by the System operator for each inspection performed during the previous calendar year. Copies of the checklists are attached to this approval.
10. Prior to the issuance of a Certificate of Compliance for the System, the System owner shall record and/or register in the appropriate Registry of Deeds and/or Land Registration Office, a Notice disclosing both the existence of the alternative septic system subject to this Approval on the property and the Department's approval of the System. If the property subject to the Notice is unregistered land, the Notice shall be marginally referenced on the owner's deed to the property. Within 30 days of recording and/or registering the Notice, the System owner shall submit the following to the Department and the local approving authority: (i) a certified Registry copy of the Notice bearing the book and page/instrument number and/or document number; and (ii) if the property is unregistered land, a Registry copy of the owner's deed to the property, bearing the marginal reference.
11. When sanitary sewer connection becomes feasible, within 60 days of such feasibility, the owner of the System shall obtain necessary permits and connect the facility served by the System to the sewer, shall abandon the System in compliance with 310 CMR 15.354, unless a later time is allowed, in writing, by the local approving authority, and shall in writing notify the Department of the abandonment.
12. Within fourteen days of the local approving authority's issuance of the Certificate of Compliance for the System, the owner shall submit a copy of the Certificate of Compliance to the Department.

## **VI. Conditions Applicable to the Company**

1. By January 31<sup>st</sup> of each year, the Company shall submit a report to the Department, signed by a corporate officer, general partner or Company owner that contains information on the System, for the previous calendar year. The report shall state: the number of units of the System sold for use in Massachusetts including the installation date and date of start-up during the previous year; the address of each installed System, the owner's name and address, the type of use (e.g. residential, commercial, school, institutional) and the design flow; and for all Systems installed since the date of issuance of this Approval, all known failures, malfunctions, and corrective actions taken and the address of each such event.



2. The Company shall notify the Director of the Watershed Permitting Program at least 30 days in advance of the proposed transfer of ownership of the technology for which this Approval issued. Said notification shall include the name and address of the proposed new owner and a written agreement between the existing and proposed new owner containing a specific date for transfer of ownership, responsibility, coverage and liability between them. All provisions of this Approval applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.
3. The Company shall develop and submit to the Department within 60 days of the effective date of this Approval: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; a maintenance checklist; and a recommended schedule for maintenance of the System essential to consistent successful performance of the installed Systems.
4. The Company shall develop and submit to the Department within 60 days of the effective date of this Approval a standard protocol essential for consistent and accurate measurement of performance of installed Systems, including procedures for sample collection and analysis of the System. The protocol shall be in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater.
5. The Company shall make available, in print and electronic format, the referenced procedures and protocol in paragraphs 3 and 4 directly above to owners, operators, designers and installers of the System.
6. The Company shall institute and maintain a program of operator training and continuing education, as approved by the Department. The company shall update the list of qualified operators and make the list known to users of the technology.
7. The Company or its designee shall conduct an intended use review of the System prior to the sale of any nonresidential unit to ensure that the proposed use of the System is consistent with the unit's capabilities.
8. The Company shall furnish the Department any information that the Department requests regarding the System, within 21 days of the receipt of that request.
9. The Company shall include copies of this Approval and the procedures and protocol described in Section V (3) and (4) with each System that is sold. In any contract executed by the Company for distribution or re-sale of the System, the Company shall require the distributor or re-seller to provide each purchaser of the System with copies of this Approval and the procedures and protocol described in Section V (3) and (4).
10. If the Company wishes to continue this Approval after its expiration date, the Company shall apply for and obtain a renewal of this Approval. The Company shall submit a renewal application at least 180 days before the expiration date of this Approval, unless written permission for a later date has been granted in writing by the

Department. This Approval shall continue in force until the Department has acted on the renewal application.

## **VII. Reporting**

1. All notices and documents required to be submitted to the Department by this Approval shall be submitted to:

Director  
Watershed Permitting Program  
Department of Environmental Protection  
One Winter Street - 6th floor  
Boston, Massachusetts 02108

## **VIII. Rights of the Department**

1. The Department may suspend, modify or revoke this Approval for cause, including, but not limited to, non-compliance with the terms of this Approval, non-payment of the annual compliance assurance fee, for obtaining the Approval by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Approval, or as necessary for the protection of public health, safety, welfare or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Approval and/or the System against the owner, or operator of the System and/or the Company.

## **IX. Expiration Date**

1. Notwithstanding the expiration date of this Approval, any System sold and installed prior to the expiration date of this Approval, and approved, installed and maintained in compliance with this Approval (as it may be modified) and 310 CMR 15.000, may remain in use unless the Department, the local approving authority, or a court requires the System to be modified or removed, or requires discharges to the System to cease.